Transformation and the Use of HIT in Pharmacy

Introduction

Historically, the industry was faced with challenges that included:

- Cash business being replaced by third party insurance programs threatening already tight cash flows
- Disparate insurance forms and insurance cards requiring more administrative effort by all sectors of the industry
- Pharmacies faced with increasing receivables and bad debt due to filling prescriptions for ineligible patients; and
- Patients using multiple pharmacies creating safety issues due to lack of available prescription history.

The pharmacy industry, as illustrated by the diagram below, has evolved into an ever increasing exchange of healthcare information. This white paper provides an overview of how the pharmacy industry came together in a coordinated, collaborative manner to find solutions to the challenges being faced.

Life Cycle of a Prescription
Establishment of NCPDP

A group representing the manufacturers, pharmacies and third party plans or payers known as the "Drug Ad Hoc Committee" was formed in 1972 to assist the Food and Drug Administration in developing and promoting the use of a numeric National Drug Code (NDC). The NDC would become the standard identifier for pharmaceutical products, used for both prescription and over the counter drugs. Manufacturers and third party payers would adopt the NDC eliminating the multiple drug lists that were confusing to pharmacies.

In 1977 as further needs for standardization surfaced, the “Drug Ad Hoc Committee” expanded and became the National Council for Prescription Drug Programs (NCPDP). NCPDP and the National Association of Boards of Pharmacy (NABP) standardized a national pharmacy identification number, which provides a seven-digit identifier for each pharmacy in the U.S. participating in a third party prescription benefit plan.

In 1981, NCPDP standardized prescription claim forms that eased the burden of third party claims submissions. This resulted in the publication of the Universal Claim Form (UCF) and adoption by most third party payers. Using standardized identifiers such as the pharmacy ID and the NDC with the UCF reduced a great deal of the confusion that previously existed. The pharmacy system software could now print the UCF form on the store’s printers, eliminating the labor-intensive handwriting of claim forms. Third party payers found processing the claim forms to be easier and more accurate due to standardized pharmacy and drug identifiers and the improved clarity, completeness and uniform location of data printed on the forms.

In 1996, NCPDP received accreditation from ANSI, the American National Standards Institute, as a Standards Development Organization. Today, NCPDP’s membership includes approximately 1,550 members who represent community pharmacies, pharmaceutical manufacturers, software vendors, drug wholesalers, insurance companies, mail service pharmacies, long term care, electronic prescribing organizations, government agencies, professional associations, pharmacy benefit management (PBM) companies and more.

Real-time claims adjudication, eligibility verification, payment reconciliation

By the 1980s, health plans moving toward a managed care model found the increasing volume of paper pharmacy claims to be a barrier to cost containment. Pharmacies saw more cash business transformed into receivables making tight cash flows profoundly tighter. Patients paid their copayments at the pharmacy based upon the information printed on their health ID card, but sometimes were faced with paying additional amounts later because their coverage varied by drug and other benefit limitations.

Exacerbating the problem for pharmacies was the increasing number of unpaid claims resulting from dispensing prescriptions to patients whose drug coverage had changed or expired. The introduction of managed care formularies proved to be challenging in the paper claim environment since coverage rules and patient copayments were becoming increasingly complex. Pharmacists were spending more time on administrative burdens and less time with the patient, thus risking patient safety.

Since many health plans’ infrastructures and systems were not designed to accommodate prescription drug information, prescription drug data repositories for clinical analysis were rudimentary at best. There was no good means to manage prescribing trends with physicians, and coverage rules set by health plans were based mostly upon drug cost limits rather than outcomes. Administrative burdens for both the pharmacy and the health plan were contributing to the rising cost of providing pharmacy care.
In 1988, pharmacies, health plans, software and telecommunications vendors again came together in the NCPDP standards development forum to build a transaction standard that enabled the pharmacy to electronically transmit a transaction to the health plan and receive the needed information through a real time electronic response while the patient was present in the pharmacy. This standard, called the NCPDP Telecommunication Standard Version 1.0, would provide real-time point of service (POS) patient eligibility verification, claims submission and claims adjudication with messaging from the health plan.

This standard became a universally accepted electronic data interchange standard for pharmacy claims transmission and adjudication, and has enabled the pharmacy's computer system to become the vehicle for pharmacy e-commerce. Now, a pharmacist can fill the prescription, enter the patient, drug and prescriber data into the pharmacy POS system, and within seconds be informed of:

- Patient and drug coverage eligibility;
- The copayment to be collected from the patient; and
- The contracted amount of the reimbursement to the pharmacy.

Later, the health plan would collect the claims to create a payment and use an NCPDP Payment Reconciliation Standard compliant electronic file. This standard was developed, using the same consensus driven process as the Telecommunication Standard, to assist the pharmacy in reconciling their outstanding receivables, thereby simplifying administrative tasks.
Today, nearly 99% of pharmacy claims are submitted real-time. With such high adoption of real-time claims adjudication and the enhancements that have been made to the standard, the benefits have transformed the pharmacy industry.

The NCPDP Telecommunication Standard has evolved with the needs of the pharmacy industry and the industry quickly realized additional benefits. In 1992, NCPDP released the Telecommunication Standard Version 3.2, which became the next widely adopted version of the standard. Health plans were now in a position to build patient prescription profiles that contained prescription histories from all pharmacies used by the patient. These profiles supported clinical programs to improve the quality of patient care and safety.

The standard enabled automated checking of duplicative pharmaceutical ingredients dispensed as a means of improving patient safety and detecting fraud and abuse.

Additionally, this standard provided support to handle unique requirements of Medicaid drug programs and Workers’ Compensation plans needs that were brought to NCPDP by representatives of these plans and programs.

**HIPAA**

The NCPDP Telecommunication Standard Version 5.1, released eleven years after version 1.0, became the first version of the standard named in the Health Insurance Portability and Accountability Act (HIPAA) of 1996 final regulations. The regulation required compliance with this version of the standard by October 16, 2003 at which time it became the third widely adopted version in the pharmacy industry.

By January 1, 2012, the industry will have fully implemented the NCPDP Telecommunication Standard Version D.0 under compliance with the latest HIPAA final rule naming updated standards. NCPDP continues to work with the Department of Health and Human Services (HHS) and the Workgroup for Electronic Data Interchange (WEDI) to coordinate the migration from one version of the standard to another, so as to best meet the needs of the industry and reduce adverse effects to service levels.

**Patient Safety**

Before the introduction of electronic tools, patients could patronize any number of pharmacies to obtain their medications and risk the adverse effects of drug interactions. Each pharmacy kept their own records and it was the responsibility of the pharmacist to perform safety checks. The introduction of pharmacy practice management systems provided pharmacists with better tools for tracking and managing their patients’ medication histories. However, there was still no systematic way for sharing information among pharmacies, or health plans, or physicians. To avoid the risk of an adverse event, a complete record of all of the patient’s medications was necessary for review. These events could be minor, or severe enough to require hospitalization or even lead to death. According to the Center for Information Technology Leadership, over 8 million adverse drug events occur each year with more than 3 million of those preventable.7

The introduction of pharmacy practice management systems, and the introduction of real-time pharmacy claims adjudication, provided the industry with the tools to track patients’ pharmacy utilization. These tools included edits to determine if a prescription was a duplicate, or therapeutically contra-indicated, prior to dispensing to the patient. The sharing of this information occurred in waves; first within the pharmacy, or

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7 The Value of Computerized Provider Order Entry Systems in Ambulatory Settings, Executive Preview, Center for Information Technology Leadership. (http://www.citl.org/research/ACPOE_Executive_Preview.pdf)
chain of pharmacies, then to the health plans and now to the physician at the point of prescribing. Today, a physician can access the patient’s medication history to see what the patient has had filled and make a decision before sending the prescription to the pharmacy. If the physician did not leverage this opportunity to check the medication history, the pharmacy can check within their own systems and then with the health plan. In many cases, the pharmacies and health plans develop their own criteria for checking a patient’s medication history, but these checks are generally built upon clinical criteria from drug information vendors and standards for the exchange of the information.

On average, Americans receive 8-11 prescriptions each year (17-23 for those eligible for Medicare). If one or two of those prescriptions can be avoided because the physician knows at the point of care that they are a duplicate of something the patient is already taking, or there may be a negative interaction with another medication, the tangible and intangible benefits are evident. There are the cost savings of not dispensing, avoiding additional treatment (whether other medications, office visits or hospitalizations related to adverse drug events) and the implied savings of improved health and patient satisfaction.

ID Cards

In the early 1990s, the pharmacy industry saw a large increase in the number of prescription claims processing companies – each with their own proprietary benefit identification card, or pharmacy ID card. With many different formats for these ID cards, pharmacists were having difficulty finding the essential information on the cards needed to submit electronic prescription claims on behalf of their patients. The time and effort spent hunting for information on pharmacy ID cards significantly reduced the pharmacist’s time available to provide patient care.

In 1997, the American Pharmacists Association (APhA) and the National Association of Chain Drug Stores (NACDS) each began initiatives to identify issues associated with pharmacy ID cards. These organizations found two broad issues where improvement was essential. First, there was missing information such as the name of the claims processor, group numbers, and help desk phone numbers. Second, there were too many formats for the information on the card and the general layout of information on the ID card. APhA and NACDS came to NCPDP for assistance in developing a standard for ID cards.

NCPDP created a Pharmacy ID Card Task Group to formulate requirements for a standards document for pharmacy ID cards. The task group soon became aware of a nearly completed standard for healthcare ID cards to be published by the InterNational Committee for Information Technology Standards (INCITS). The INCITS 284 standard was published by the end of 1997 and NCPDP adopted the standard as a basis for uniform pharmacy ID cards. The remaining challenge for the NCPDP task group was to apply stakeholder requirements in the form of an implementation guide for the INCITS 284 healthcare ID card standard. In 1998, NCPDP published its first release of the Health Care Identification Card - Pharmacy ID Card Implementation Guide.

Today, more than thirty states (shaded in the map below) have either adopted through legislation NCPDP’s implementation guide for pharmacy ID cards or have used the NCPDP guide as the basis for legislation (some states prohibit naming a third party entity such as NCPDP in state legislation) related to pharmacy ID cards.

8 "Managed Care Pharmacy Practice, Second Edition", by Robert P. Navarro, PharmD
cards. Most of these states passed their legislation in the five years immediately following the first publication of the NCPDP's Health Care Identification Card – Pharmacy ID Card Implementation Guide.

**States with Pharmacy ID Card Legislation**

Key in nationwide acceptance and adoption of the NCPDP's Health Care Identification Card – Pharmacy ID Card Implementation Guide was the benefits gained by all stakeholders. Patients have reduced wait times at their pharmacy; patient safety has improved by ensuring proper identification of patients; card issuers have reduced their costs by greatly reducing the number of customized ID cards and by receiving fewer phone calls from pharmacists, and physician offices now can quickly find the information they need on ID cards for submitting electronic prescriptions or querying medication history.

NCPDP continues to work on enhancements to the implementation guide, addressing items such as combined medical/pharmacy ID cards, discount pharmacy cards, and the integration of machine-readable technology. Based on the success of NCPDP’s uniform pharmacy ID card guidelines, NCPDP has also collaborated with the Workgroup for Electronic Interchange (WEDI) in the publication of a healthcare ID card implementation guide to be used by medical, dental and vision benefit plans.

**Electronic Prescribing**

Patients are accustomed to seeing their physician, receiving a small slip of paper with some hard to read notes, presenting it to their pharmacist and getting the medication they assume is what their doctor ordered. This process is fraught with the potential for error – the wrong medicine, the wrong dose – that could adversely impact the patient’s health. Electronic prescribing is a tool that profoundly improves patient care and safety. It is the computer-to-computer transfer of prescription data between pharmacies, physicians, and payers. It eliminates the need for difficult to read paper prescriptions, or the risk of misinterpreting the drug or instructions prescribed when a prescription is called into the pharmacy. Using the consensus process between industry stakeholders, NCPDP developed and published an electronic prescribing standard, SCRIPT, in 1997.

Electronic prescribing using the SCRIPT Standard supports the transmission of new and changed prescriptions, refill requests and the sharing of a patient’s medication history. These tools, coupled with clinical tools resident in the electronic prescribing application, can provide the physician with accurate, current clinical information about the patient, preventing duplicate or contra-indicated prescriptions, increase formulary compliance and prevent incorrect prescriptions from being ordered and/or dispensed. For these
reasons, and others, the Institute of Medicine recommends that all physicians and pharmacies use electronic prescribing by 2010.\textsuperscript{9} The industry will not achieve this goal, but important gains are being made daily. In 2005, the SCRIPT Standard was named under Title I of the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA). As with the Telecommunication Standard, NCPDP continues to work with HHS to find ways to ensure that the version named reflects the current needs of the industry.

Updated versions of the SCRIPT Standard include enhancements such as drug utilization review (DUR) alerts, drug formulary or plan preferred drug information, notification to a pharmacy of updated or additional resident information, and additional information such as clinical lab values, patient drug profiles, allergy information and prescription transfers.

There are barriers that must be addressed federally to ensure the widespread adoption and implementation of electronic prescribing functionality. Specifically, all patient care settings, such as long term care, should be required to use electronic prescribing, and the regulatory ban on the use of electronic prescribing for controlled substances needs to be lifted. The ban on the use of electronic prescribing for controlled substances is a significant barrier in the adoption of electronic prescribing because it requires physicians to maintain separate workflows depending upon the type of prescription they are writing.

As the use of electronic prescribing grows, and its benefits become more apparent, it is being embedded into policies and practices throughout healthcare. The Joint Commission, which accredits healthcare organizations and programs, has established National Patient Safety Goals specifically related to the use of medications. Electronic prescribing is a critical tool in helping meet those goals. The Certification Commission for Health Information Technology (CCHIT) requires the ability to support electronic prescribing in their 2008 Ambulatory EHR certification criteria.

Many benefits are realized by the use of electronic prescribing – in improved patient care and financial gains. From a patient care perspective, patients receive the proper medications, avoid redundant treatments, and have better medication compliance due to the improved convenience and satisfaction achieved in obtaining their medications. Financially, benefits include administrative simplification, reduced errors that would otherwise result in additional expenses related to hospital admissions, emergency room visits, medication waste, overuse of medications, etc.

With the current shortages in clinical professionals, such as physicians, pharmacists, nurses and others, a reduction of administrative activity provides additional time to care for patients. The challenge of treating more patients with fewer resources will be upon us for some time to come with the aging of the Baby Boomers, so it is critical that we leverage all of the technology available to allow the focus to be on the patient. The SCRIPT Standard is helping meet this challenge.

**Standards Collaboration and the SDO Charter Organization (SCO)**

There are other standard development organizations (SDOs) involved in healthcare related standards that have made great use of information technology to improve capabilities and reduce costs. Like NCPDP, these SDOs have grown and evolved over the past several years by enhancing their existing standards and developing new standards as needed by the healthcare industry.

\textsuperscript{9} The Institute of Medicine Reports in 1999 and 2001, “To Err is Human” [http://www.iom.edu/?id=12735](http://www.iom.edu/?id=12735) and “Crossing the Quality Chasm” [http://www.iom.edu/CMS/8089.aspx](http://www.iom.edu/CMS/8089.aspx).
There has been duplication of efforts among SDOs resulting in more than one standard created to address similar industry needs. SDOs have encountered hurdles in the standard adoption process because there are competing standards. More often than not, one standard may be just as good as another standard, while others fall short of meeting the needs of certain segments of the industry. At some point, the standards may collide likely due to regulatory requirements or endorsements from healthcare-related associations.

The debate of which standard should be “the” standard often involves reviewing the credibility of the SDO, the number and quality of other standards widely adopted by each SDO, the industry stakeholder mix within each SDO (e.g., medical versus pharmacy, payers versus providers, etc.), and more. This process usually results in the desired objective of a single standard, but there have been unnecessary resources expended by the organization whose standard was not selected by the industry.

To address this issue, some SDOs have joined forces on creating standards; formed “memorandums of understanding” between their respective organizations; created dual-membership opportunities for their members (i.e. membership in one organization provides full or some limited version of membership in another organization); and more. NCPDP has participated in several of these collaborative efforts between SDOs and affiliate organizations.

While achieving great strides on the collaborative front, more integration of the various standards into a seamless healthcare technology interoperable unit is needed. Interoperability barriers are often encountered such as differing healthcare terminology and semantics between standards, varying standards development processes employed by SDOs, and key stakeholders focusing on self-serving objectives rather than global objectives.

To address this ongoing issue with interoperability, NCPDP led the formation of a new collaborative organization called the SDO Charter Organization, or SCO. SCO members include NCPDP, Accredited Standards Committee X12, American Dental Association (ADA), American National Standards Institute (ANSI), ASTM International, Clinical Data Interchange Standards Consortium (CDISC), GS1 US, Health Level 7 (HL7), Healthcare Information Technology Standards Panel (HITSP), Integrating the Healthcare Enterprise (IHE), Office of the National Coordinator for Health Information Technology (ONC), the U.S. Social Security Administration and the Workgroup for Electronic Data Interchange (WEDI).

The mission of the SCO is “to provide an environment that facilitates effective coordination and collaboration on U.S. national healthcare informatics standards development, with recognition of the international and multi-industry stakeholder implications and challenges.” Its purposes are to:

- Facilitate the coordination of conventions for enhanced interoperability among diverse standards development organizations in the areas of health data acquisition, processing, and handling systems, and
- Communicate and coordinate when appropriate with the U.S. Technical Advisory Group (US TAG) in order to facilitate a unified representation of US standards.

The SCO is working on methods to remove barriers and improve capabilities and efficiencies which will result in more cost effective healthcare and ultimately, better healthcare outcomes. Specifically, the SCO’s objectives and goals for the standards development community are to:

- Facilitate the creation of a common information model to coordinate the semantics of the data to be exchanged,
- Define a common method for expressing stakeholder commitments,
- Leverage existing terminology and data types,
- Use a common approach consistent with ANSI-accredited procedures in standards development to achieve interoperability across the healthcare user community,
- Recognize the roles and responsibilities of stakeholders, and an effective outreach to subject-matter experts,
- Coordinate strategies among SDOs (e.g. models, collaboration, vocabularies, etc.)
- Optimize financial and human resources, and
- Increase usability and quality of standards and their ability to support meaningful improvement in healthcare outcomes.
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